

### **ABSTRACT**

The present invention discloses the circuit configurations and control logic to monitor the temperature of the liquid crystal as directly as possible then render and pass this data to a processing unit. The control logic in the processor then issues corrections to the voltage delivered to the liquid crystal cell to permit the liquid crystal device to continue to operate in its useful voltage range (the monotonically increasing range previously mentioned.) The object is to provide temperature control and compensation control module that would be flexibly applicable to different types of microdisplay systems. For a microdisplay system where the E-O curve decreases monotonically with increasing voltage, the control module can issue an appropriate correction signal for controlling and compensating the performance of a microdisplay as temperature variation occurs. For particular microdisplay system wherein the liquid crystal does not behave monotonically, the control module of this invention can still be useful with special adaptations of curve fitting or database interpolation operations.